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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
WINDER, PATRICE L	
ART UNIT	**PAPER NUMBER**
2145	

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/669,424	HOLAN ET AL.	
	Examiner	Art Unit	
	Patrice Winder	2145	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10-6-2005*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-23* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-23* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 15 and 20 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. Steps critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976). Applicant argues "Claim 1 requires that a service discovery stream be converted into an N-ary tree" (page 14 of remarks). As claimed, claims 1, 15 and 20 lack essential steps for converting a discovery stream into an N-ary tree. In the very least the N-ary tree should be constructed within the independent claim. The claims lack essential steps leading to conversion of a discovery stream into an N-ary tree and completing conversion of the discovery stream into an N-ary tree.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-7, 10-11, 15-16 and 20-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over King, 6,532,476 B1 (hereafter referred to as King) in view of Pettus, USPN 6,031,977 (hereafter referred to as Pettus).

5. Regarding claim 1, King taught a computer readable medium having computer executable instructions for performing steps to convert a stream into an N-ary tree, the stream having a list of nodes (list of nodes = DynArray, column 7, lines 63-67), each node having a data element, a data type and a data size (column 7, lines 63-67), the stream having a stream size (column 7, lines 63-67), the steps comprising:

a) retrieving the data type and the data size of one of the nodes from the service discovery stream (column 14, lines 49-51, 59-61);

b) adding the node to a list head (column 14, lines 61-66);

c) performing one of decrementing the stream size by the data size and incrementing the discovery service stream to the beginning of a next data element (column 14, lines 61-66); and

d) obtaining a next node from the list of nodes (column 14, line 63 – column 15, line 3). King does not specifically teach the stream is a discovery stream. However,

Pettus taught a discovery stream that is converted into a tree structure (column 11, line 64 – column 12, line 4). Pettus also taught the discovery stream has data structures encoded within to represent an available service on an enabled device (column 10, lines 19-33). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating King's system for storage and retrieval of diverse information in Pettus' discovery service system would have expanded the directory services ability to add new services. The motivation would have been to take advantage of King's utility as an adaptive database for storing and retrieving information of any type and format.

6. Regarding dependent claim 2, King taught having further computer-executable instructions for performing the steps of:

determining the number of nodes in the list of nodes (Table 1, column 8, line 15-20); and

setting the list head to a sibling list pointer of the node (column 8, lines 5-8).

Pettus taught ensuring the service discovery stream is well formed (column 9, lines 21-27); and creating a stack (column 10, lines 26-46);

7. Regarding dependent claim 3, King taught having further computer-executable instructions for performing the step of repeating steps a), b) and c) for the next node (column 14, line 63 - column 15, line 3).

8. Regarding dependent claim 4, King taught having further computer-executable instructions for performing the step of repeating steps a), b) and c) for each node in the list of nodes (column 14, line 63 – column 15, line 3).

9. Regarding dependent claim 5, King taught having further computer-executable instructions for performing the step of determining if the node is a leaf node (column 14, lines 63-66).

10. Regarding dependent claim 6, King taught further computer-executable instructions for performing the steps of:

if the node is a leaf node (column 15, lines 4-10):

adjusting the service discovery stream beyond the data element (column 14, lines 63-66);

determining if the stream size of the next node is zero (column 13, lines 30-35); and wherein the step of performing one of decrementing the stream size by the element size and incrementing the service discovery stream to the beginning of the next node comprises the step of decrementing the stream size (column 13, 30-35).

11. Regarding dependent claim 7, King taught having further computer-executable instructions for performing the steps of:

if the node is not a leaf node (column 14, lines 63-66):

determining if the data size is zero (column 13, lines 30-33, 35-38):

if the data size is not zero, the step of performing one of decrementing the stream size by the data size and incrementing the service discovery stream to the beginning of a next node comprises the step of incrementing the service discovery stream to the beginning of the next node (column 13, lines 30-33, 35-38); and

repeating steps a), b), c), and d) (column 14, line 63-column 15, line 3).

12. Claims 8-9, 12-14, 17-19, and 22-23 rejected under 35 U.S.C. 103(a) as being unpatentable over King and Pettus, further in view of Housel, III USPN 5,339,421 (hereafter referred to as Housel).

13. Regarding dependent claim 8, King does not specifically teach the details of memory management associated with parsing the stream of data. However, Housel taught having further computer-executable instructions for performing the steps of:
if the node is not a leaf node:

pushing the list head, the node, and the stream size into a stack (column 20, lines 26-27, 62-66);

setting the list head to one of a sibling list pointer of the node and a container list head (column 20, lines 26-37); and

setting the stream size to one of a size of a parent node content size and a container stream size (column 20, lines 45-54). It would have been obvious to one of ordinary skill in the art at the time the invention was made that incorporating Housel's memory management while parsing a stream in King-Pettus' system for converting a discovery stream to a N-ary tree would have improved system parsing. The motivation would have been to alleviate the need for the receiver applications to be able to interpret the data format in the transmission stream to decode the stream (column 1, lines 39-62).

14. Regarding dependent claim 9, King does not specifically teach the detail of memory management associated with parsing the stream. However, Housel taught having further computer-executable instructions for performing the steps of:

if the stream size is zero (column 22, lines 20-35);

determining if the stack is empty (column 22, lines 20-35);

if the stack is not empty (column 22, line 57-column 23, line 8);

obtaining a popped list head, the next node, and a popped stream size from the stack (column 22, line 39-column 23, line 8);

setting a children pointer of the next node to the list head (column 23, line 9-21). For motivation see 8, above.

15. The language of claims 10-11, 15-16, 20-21 is substantially the same as previously rejected claims 1-6. Therefore claims 10-11, 15-16 and 20-21 are rejected on the same rationale as previous rejected claims 1-7.

16. The language of claims 12-14, 17-19, 22-23 is substantially the same as previously rejected claims 1-6. Therefore claims 10-11, 15-16 and 20-21 are rejected on the same rationale as previous rejected claims 8-9.

Response to Arguments

17. Applicant argues – "Thus, King teaches no explicit way to determine the data type (such as unsigned integer, signed integer, boolean, text string, etc.) being stored in the DynArray."

a. In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., unsigned integer, signed integer, Boolean, text string, etc.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the

specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

b. The scope of data type is wider than the arguments raised by applicant.

18. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patrice Winder whose telephone number is 571-272-3935. The examiner can normally be reached on Monday-Friday, 10:30 am-7:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Cardone can be reached on 571-272-3933. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Patrice Winder
Primary Examiner
Art Unit 2145

December 12, 2005